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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,099	09/25/2003	William R. Hancock	H0005180 (256.157US1)	6350
21186 7590 07/02/2007 SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			EXAMINER WOODS, ERIC V	
			ART UNIT 2628	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/671,099

Applicant(s)

HANCOCK, WILLIAM R.

Examiner

Eric Woods

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-20 and 34-49 is/are pending in the application.
- 4a) Of the above claim(s) 34-49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

Applicant's election without traverse of Group I (claims 13-20) in the reply filed on 4/18/2007 is acknowledged.

Claims 34-49 stand withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected groups, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 4/18/2007.

The subject matter therein is therefore foreclosed for rejoinder and any applicability of 37 CFR 1.144.

Claims 1-12 and 21-33 were canceled.

### *Response to Arguments*

Applicant's arguments, pages 10-18, and amendments to the claims, filed 9/11/2006, with respect to claims 13-20 have been fully considered.

The rejection of claims 13-20 under 35 USC 101 stands withdrawn in view of applicant's amendments to the claims (e.g. 'computer-implemented').

The rejection of claims 13-20 under 35 USC 112, first paragraph, stands withdrawn in view of the stated locations of the various elements.

The rejection of claim 16 under 35 USC 112, second paragraph, stands withdrawn **but applicant is STRONGLY encouraged to change the language to read "with respect to" as the current language ('about') could be read in several ways that are confusing.** As applicant has noted, the intended definition can be puzzled out, but at the same time applicant has a burden to **clearly** point out and **distinctly** claim

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the invention. The terminology "symmetric about the midline" is distinctly less clear than "symmetric with respect to the midline."

With respect to the rejection of claims 13-20 under 35 USC 103(a), they are withdrawn; examiner has carefully considered applicant's comments, and responds to them below.

With respect to a rebuttal not raised by the previous examiner in the previous Office Action, a Bezier curve is a form of an arc. The claim does not define 'arc' and one of ordinary skill in the art would understand that any curve that could be represented in the format of that shown in Trow Figures 2 and 3 and has the inflection shown would constitute an 'arc,' where the standard definition for such term is: 'any unbroken part of the circumference of a circle **or other curved line.**' (dictionary.com) While applicant is entitled to serve as applicant's own lexicographer, any redefinition of such a well-known term must be clearly pointed out and set forth in the specification in a manner sufficient to provide public notice. Such an event has not occurred in the instant case. Therefore, a Bezier curve properly constitutes an 'arc.'

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

With respect to the first paragraph on page 17, motivation may be derived from a plurality of sources, as described in MPEP 2143.01 [R-5] (citing various decisions), inclusive of the nature of the problem to solved and the knowledge of one of ordinary skill in the art. Applicant's attack on the motivation to combine the references must therefore fail because it does not point out errors in examiner's *prima facie* case (see MPEP 2141.03 [R-2] and MPEP 2141-2144 *et seq.*)

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Next, applicant page 17 asserts that a reference does not disclose 'obtaining a texture having multiple columns of texels.' Examiner points out that an image contains a plurality of rows and columns as a matter of course, so a texture, being an image, would as well. Therefore, any contention that in general, any reference lacks a teaching or a suggestion for this limitation simply cannot be supported in view of the evidence in the record and the understanding of one of ordinary skill in the art.

Any purported benefits of applicant's invention or applicant's asserted failure of the prior art are not relevant to prosecution without further details. There exists no evidence in the record concerning secondary indicia of non-obviousness; there is no nexus between applicant's conclusory assertion and supporting evidence; arguments of

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counsel cannot take the place of factually supported objective evidence (see, e.g., *In re Huang*, 100 F.3d 135, 139-40, 40 USPQ2d 1685, 1689 (Fed. Cir. 1996); MPEP 2144.08; etc.); and arguments of counsel cannot take the place of evidence in the record (MPEP 2145 [R-3] (I) and MPEP 716.01(c)).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 13-20 stand rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for obtaining trapezoids corresponding to the vertices; obtaining a texture having multiple columns of texels; representing the trapezoids as triangles; and mapping the texture to the triangles, does not reasonably provide enablement for **selecting multiple vertices of the arc**. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

Specifically, the written description does not support an operation of 'selecting multiple vertices of the arc.' The written description clearly discloses that a circle or arc must first be divided into segments. Specifically, [0012], describing Figure 1:

A representation of a circle 110 defined by a line having a predetermined width is shown in FIG. 1. A radial portion of the circle 110 is shown at 115, which defines an arc 120. A trapezoid 125 is defined around the arc 120, and has a long side 130 of the trapezoid is a tangent to the outside of the line defining the circle 110. A short side 135 of the trapezoid is a chord extending between two

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endpoints 145 and 150 of the arc at the inside of the line defining the circle 110. The equal length sides 155 and 160 of the trapezoid follow radii of the radial portion 115 and extend radially between the long side 130 and the short side 135.

Therefore, as shown above, there is no teaching of 'selecting multiple vertices of the arc' without first breaking, subdividing, and/or otherwise segmenting the arc into different pieces such that the vertices can be obtained by e.g. using the intersection points of the radial segments with the exterior edge of the circle.

Claims 13-20 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, the claimed limitation is directed at a generic method of 'selecting multiple vertices of the arc,' where the written description only discloses a two-step operation, and the disclosed step is both generic and not present as one operation. Therefore, the substantive, controlling law (MPEP 2163 [R-5]) in the instant case is *LizardTech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336, 1345, 76 USPQ2d 1724, 1733 (Fed. Cir. 2005). In that case, a broadly written generic claim that covered *all* methods (e.g. generic) of generating seamless wavelet transforms was found to invalid for lack of written description *all* such methods **of executing one step in the recited claim**, wherein the specification only disclosed *one, specific* method of doing so. In the instant case, the specification does not support all methods of executing this particular step.

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Therefore, it must follow logically that claim 13 fails to comply with the first paragraph of 35 U.S.C. 112 under both grounds provided above.

Claims 14-20 are rejected as failing to correct the deficiencies of their parent claim(s).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 13-20 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 stands rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: dividing or segmenting the arc into pieces or segments that have vertices, as disclosed in the specification on page 4, [0012].

Claims 14-20 are rejected as not correcting the deficiencies of their parent claims.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 13-14, as best understood, stand rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher et al (US 6,621,451 B1)('F1') in view of Michail et al (US 2004/0263516)(cited with previous non-final rejection)('M1').**

As to claim 13,

F1 teaches:

A computer implemented method of representing an arc, the method comprising: (6:1-45, particularly 6:36-45 and Figures 4D-4E)

-Selecting multiple vertices of the arc; (Figure 4D, 4:24-40, 6:34-45)

-Obtaining trapezoids corresponding to the vertices; (Figure 4E, radial divisions are shown intersecting corresponding range bins, thusly forming trapezoids - 2:65-3:5; 5:45-65; 6:36-45; etc)

-Obtaining a texture having multiple columns of texels; (Regular textures – stored in rectangular format in texture memory – 3:25-35; 4:1-6; these textures (Figures 4D-4E, 4:35-62; 5:40-45) are therefore obtained by the processor as necessary (7:15-20; **8:40-50)**

However, F1 fails to expressly, explicitly teach but M1 teaches **representing the trapezoids as triangles** (Figure 9 – represents trapezoid 523 as triangles 900 and 902 – see [0057-0058,0062,0065,0069,etc]) and **mapping the texture to the triangles**. ([0057-0058,0062,0065,0069]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify F1 in view M1 to break trapezoids into triangles to accommodate situations involving uneven edge slopes [0058] and rendering problems [0062, 0065, 0068, 0072] which is an issue not expressly addressed by F1 in the mapping of the rectangular textures to the textures.

As to claim 14, F1 does not expressly teach but M1 teaches a Gouraud shading technique for reducing line anti-aliasing (see Abstract and [0069-0070]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify M1 in view of F1 to include anti-aliasing because such process improves the visual appearance and resolution of presented graphics.

As to claim 15, F1 does not expressly, explicitly disclose but M1 further discloses different shading and colors applied to the edge line profile of the triangles ([0069-0070]). Motivation and rationale are incorporated by reference from the rejection of their parent claim.

As to claim 20, F1 teaches that textures are rectangular and that such mapping occurs along a radial bounded by the top and bottom of the assigned range bin (- 2:65-3:5; 5:45-65; 6:36-45; 7:15-20; 8:40-50; etc)

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Claim 16 is rejected under 35 USC 103(a) as unpatentable over M1 in view of F1 as applied to claim 13 above, and further in view of Mukoyama et al (US PGPub 2005/0035979 A1)('M2').

M1/F1 fail to expressly teach that the texture is symmetrical about a midline of a trapezoid, but M2 teaches that it is well known to insert textures in a symmetric manner [0004,0019-0022] therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to assure that such objects appear to be the most realistic and the radial mapping is easier [0004,0019-0022].

**Claim 17 is rejected under 35 USC 103(a) as unpatentable over M1 in view of F1 as applied to claim 13 above, and further in view of Ikedo (US 5,900,861 A)('I1').**

M1/F1 fail to expressly teach, but I1 (5:45-51) teaches **applying a reverse perspective view transformation to textures** where it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify M1 to utilize reverse-perspective view transform because the angles involved are not defined in device coordinates (5:45-51).

**Claims 18-19 are rejected under 35 USC 103(a) as unpatentable over M1 in view of F1 as applied to claim 13 above, and further in view of Foley et al (cited in last OA)('F2').**

Regarding claims 18-19, M1/F1 fail to expressly teach a **multiple variation for forming a trapezoid in accordance with the arc(s) and/or the curve(s)** but F2 teaches such a limitation (Fig. 11.27, pages 500-501), and it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify M1/F1 to utilize such a technique as in F2 to allow for more flexibility in creating trapezoids (pages 500-501), which is in accordance with the various techniques of M1 (6:20-47, 8:10-22, etc).

### ***Conclusion***

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Woods whose telephone number is 571-272-7775. The examiner can normally be reached on M-F 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Eric Woods

6/25/2007



Ulka Chauhan  
Supervisory Patent Examiner